# Trees For Teens

# 2008

# Backyard Conservation

Bureau of Forestry

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Trees For Kids / Teens 2008 Team

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A special thank you to all our Trees For Kids / Teens partners for 2008!

# Trees For Teens 2008

## The Program

Trees For Kids / Teens is an educational program that involves learning about and planting trees, with a focus on Iowa's elementary and secondary school students. Its goals are to educate students about the values of trees and to encourage tree planting projects at schools or other public areas around the state of Iowa.

This unique program is sponsored by the Iowa Department of Natural Resources - Bureau of Forestry, MidAmerican Energy, Black Hills Energy, Alliant Energy, Trees Forever, Iowa Tree Farm Committee, Iowa Woodland Owners Association, Iowa Bankers Association, and Iowa Landscape and Nursery Association.

The educational materials include tree/forestry information and classroom activities designed to compliment science, reading, math, geography, computer skills, history, and other subjects. Feel free to utilize any or all of the materials and to print/photocopy specific activities. If you would like a hard copy, please contact the Iowa DNR Trees For Kids Coordinator at 515/ 281-6749 or visit the TFK / TFT webpage at: www.iowadnr.gov/forestry/treesforkids.

## The Trees

Trees For Kids / Teens offers opportunities to have demonstration tree plantings at your school. Most of these plantings are done in celebration of Earth Day and Arbor Day in the spring, but can be planned for anytime that the weather will cooperate. Contact your local District Forester or the Trees For Kids Coordinator at 515/ 281-6749 for more information on these demonstration plantings.

**We suggest that you do the following to prepare for your tree planting**:

- Discuss planting trees with your principal, grounds keeper, and all other interested parties
- Contact your District Forester or the Trees For Kids Coordinator to arrange a planting event
- Locate an appropriate site
- Decide what species you would like to plant
- Schedule after-planting maintenance and care
- Coordinate a youth group / class to participate in the planting
- Find volunteers and planting materials (shovels, gloves, hoses, etc.)
- Make arrangements to have the plant materials delivered
- Set a planting day, choose a rain day
- Arrange to have mulch delivered / donated
- Finalize plans
- Contact Iowa One Call 1-800-292-8989 to locate utilities (give at least 48 hours notice)

# What Tree is Right for Your Planting?

Trees in the urban environment provide many benefits including beauty, shade, visual screening, and energy conservation. Unfortunately, it can be difficult to get a shade tree established in the tough growing conditions of an urban setting. The soils are often poorly drained and overly compacted, making it difficult for a shade tree to survive and thrive.

To reduce transplanting problems, it is important to select a tree that best suits the planting site. Before planting, envision how the mature tree will fit into the site. Will it interfere with structures, utilities, sidewalks, playgrounds, or block the view of traffic? Will the selected tree produce maintenance problems due to unwanted fruit or messy leaf litter? Selecting the correct tree for the site can reduce future problems.

During the planning, match the soil drainage on the property to the tree's requirements and make sure that the tree will not outgrow the site. Diversify the mix of tree species to maximize resistance to insects and disease. Proper planning, planting and post-planting care can help insure a healthy, long-lived tree. Below is a list of trees and their growing requirements. Use this list to help determine what tree is right for your planting project.

| **Species** | **Growth rate** | **Shade tolerance *** | **Soil drainage**** | **Height (ft)** |
|---|---|---|---|---|
| Aspen, Bigtooth | fast | very intolerant | mp, mw | 20-40 |
| Aspen, Quaking | fast | intolerant | mp, mw, well | 40-50 |
| Basswood, Amer. | medium | tolerant | mw, well | 60-80 |
| Cherry, Black | medium | intermediate | mw, well | 50-60 |
| Cherry, Choke | medium | intermediate | poor-well | 20-30 |
| Coffeetree, KY | medium | intermediate | mp, mw | 60-75 |
| Hackberry | medium | intolerant | mp, mw, well | 40-60 |
| Hawthorn | slow | intolerant | mw, well | 15-30 |
| Hickory, Shagbark | slow | intermediate | mp, mw, well | 60-80 |
| Locust, Honey | fast | intolerant | mw, well | 50-70 |
| Maple, Red | medium | intermediate | poor-well | 40-60 |
| Maple, Sugar | slow | intolerant | mw, well | 60-75 |
| Oak, Bur | slow | intermediate | mp, mw, well | 70-80 |
| Oak, Pin | medium | intermediate | poor, mp, mw | 60-70 |
| Oak, Red & Black | medium | intermediate | mw, well | 60-75 |
| Oak, Shingle | slow | intolerant | mp, mw, well | 50-60 |
| Oak, Swamp White | fast | very intolerant | poor, mp, mw | 50-60 |
| Oak, White | slow | intermediate | mw, well | 50-80 |
| Pine, White | medium | intolerant | well | 50-80 |
| Red Cedar, Eastern | slow | very tolerant | mp, mw, well | 40-50 |
| Sycamore | fast | intermediate | poor-well | 70-100 |
| Walnut, Black | fast | intolerant | mw, well | 50-75 |

* Shade intolerant trees require full sunlight, intermediate trees can handle some shade, and shade tolerant trees can handle low, partial, or full sunlight.

** Poor, Moderately Poor, Moderately Well, and Well.

As always, there are exceptions to these general rules.

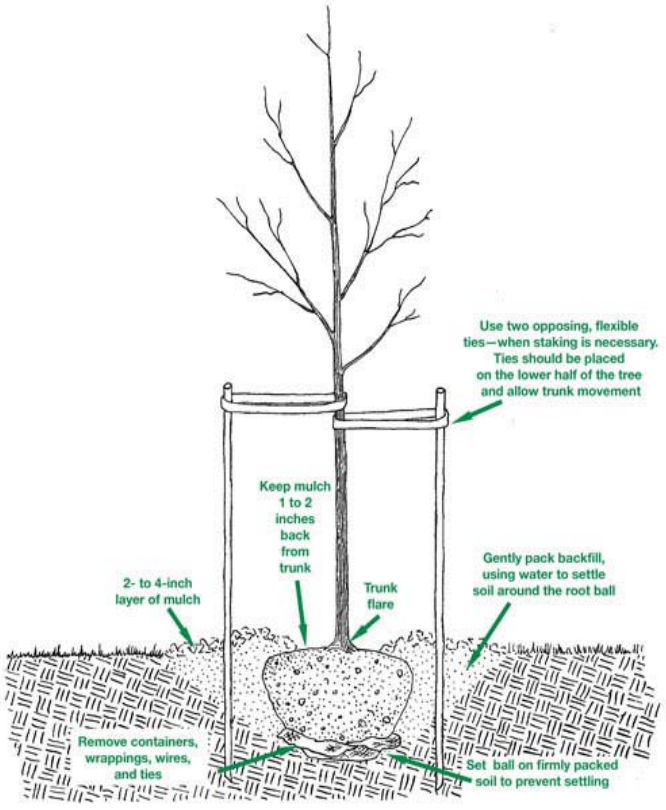
# Planting and Caring for Newly Planted Trees

## Planning & Species Selection

• Consider where the above and below ground utilities are located (i.e. electric wires, phone and television cables, sewer and water pipes). Call **Iowa One Call at 1-800-292-8989** at least two days before you start digging to find the exact location of underground utilities. "It's free, it's the law!"
• Examine the soils in the selected site to make sure they match the tree species you will be considering. Does the soil stay wet or saturated for an extended period of time after it rains? Or does the soil seem dry and somewhat sandy? Is this a high traffic area such as a playground that will have compacted, poorly drained soils?
• Pick a species that will fit in the site selected. The site should be a minimum of 40 feet away from electrical power lines and light poles and 20 to 30 feet away from buildings for large shade trees.
• Consider low-growing trees for planting areas that are closer to power lines and light poles. Utility companies recommend keeping the vegetation at least 10 feet away from existing lines. Keep in mind that most power lines are 30 to 35 feet above the ground.
• Avoid planting low-growing trees near signs, street corners, and other areas where they could block people's view.
• Is the planting site in full sun, partial sun, or full shade?

## Proper Planting

• Dig the planting hole 2 to 3 times wider and no deeper than the root ball.
• Do not plant the tree too deep or too shallow, the root collar (swelling where the trunk meets the large supporting roots) should be at or slightly above ground level. Supporting roots may be on the surface or might be covered by a couple of inches of soil.
• Remove all twine and plastic labels from the branches and trunk and at least the top one-third of the burlap and wire from the root ball (remove all material if not natural burlap). If the tree is container grown, remove it from the container.
• Lower the tree by the root ball (not the trunk) carefully into the hole to avoid damaging the trunk or root system.
• Back-fill the hole with the original soil; do not use amendments such as moss or potting soil.
• Gently settle the soil around the roots by hand, making sure that air pockets are not created. Gently step around the tree to firm up the soil.
• Slowly water the area to remove any air pockets that remain. Mulch around the tree with wood chip mulch to keep the site moist. Keep mulch away from the base of the tree to prevent moisture buildup that can lead to rot.
• Avoid watering every day; water heavily (ten gallons or a hose on a slow drip for twenty minutes) every seven to ten days to encourage deep root systems, depending on rainfall.



# Backyard Conservation:

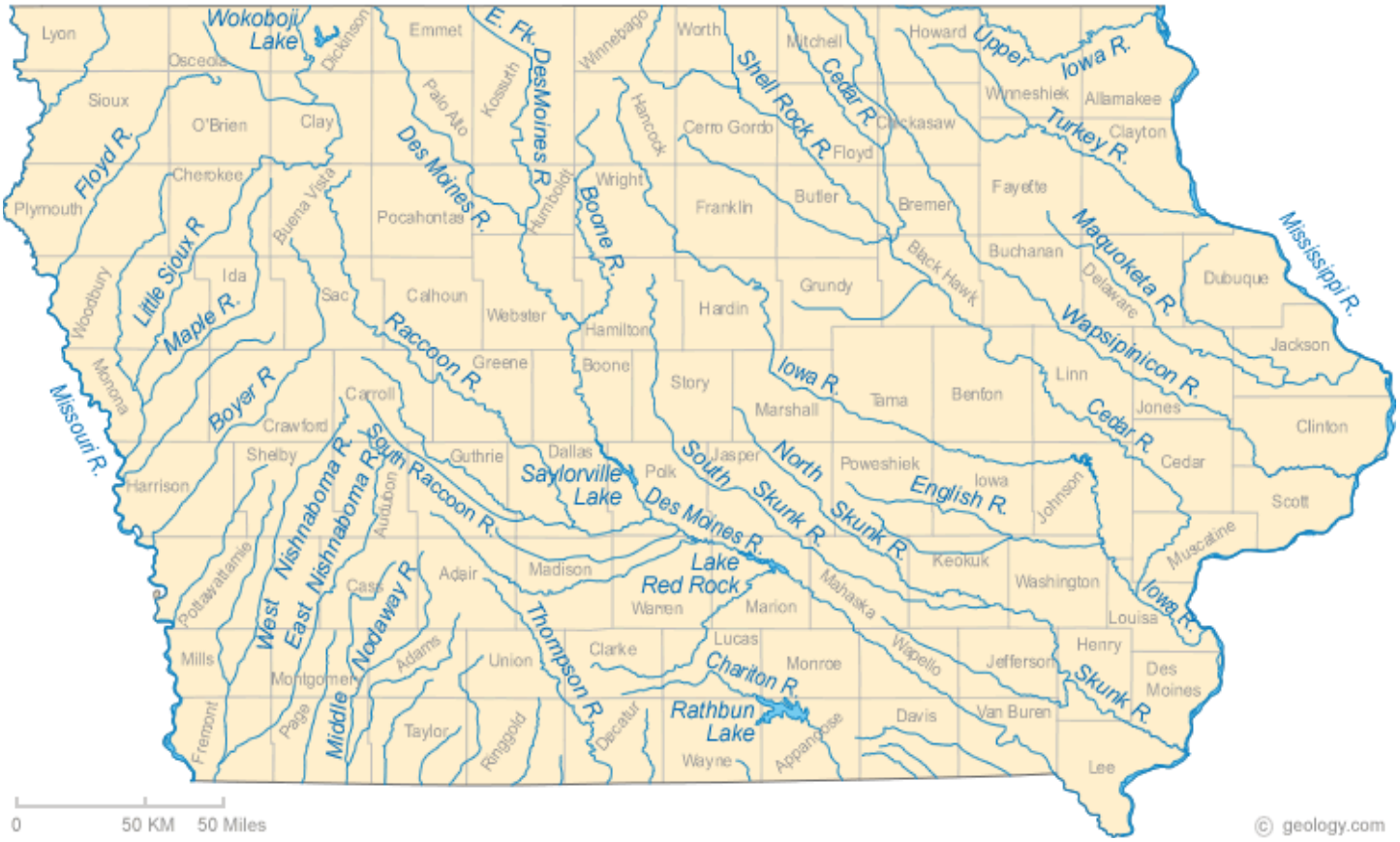
## The Environment Within Your Reach

The environment is all around us; there is a whole world of interesting plants and animals right in your backyard! Getting to know your urban ecosystem is a great way to understand larger ecosystems. There are environmental issues in your town or city that correspond to national or even global issues. These include soil erosion, energy usage, diversity loss, water quality, and habitat loss.

You are a global citizen, but feeling like you can help with global issues can be overwhelming. There is a lot that you can do in your own backyard, home, or town that can assist in reducing your impact on the environment. This booklet will help you get to know your local environment and show you how to make a difference in the world in which you live.

# Iowa: Get To Know Your State

## Rivers of Iowa




## Activity

Do you know the major rivers near your community? Use a map or get online to find a river near you and ask questions like:

What is a river? What is a stream? What is a reservoir? What is a watershed?

How healthy is the river ecosystem? How do you know if a river is healthy?

Are there any major pollution problems?

What kind of plants and animals live around and use the river?

Are there any threatened and endangered plants or animals in the watershed?

What kinds of activities can you do on or near a river?

Where does your river start? Where does it end?

What can **you** do to improve your watershed and river?

# Iowa: Get To Know Your State

## Native Trees and Shrubs

| Common Name | Scientific Name |
|---|---|
| American Basswood | *Tilia americana* |
| American Elm | *Ulmus americana* |
| American Hornbeam | *Carpinus caroliniana* |
| Balsam Fir | *Abies balsamea* |
| Balsam Poplar | *Populus balsamifera* |
| Bigtooth Aspen | *Populus grandidentata* |
| Bitternut Hickory | *Carya cordiformis* |
| Black Ash | *Fraxinus nigra* |
| Black Cherry | *Prunus serotina* |
| Black Maple | *Acer nigrum* |
| Black Oak | *Quercus veluntina* |
| Black Walnut | *Juglans nigra* |
| Blackhaw Viburnum | *Viburnum prunifolium* |
| Blackjack Oak | *Quercus marilandica* |
| Blue Ash | *Fraxinus quadrangulata* |
| Boxelder | *Acer negundo* |
| Buffaloberry | *Sheperdia argentea* |
| Bur Oak | *Quercus macrocarpa* |
| Butternut | *Juglans cinerea* |
| Canadian Yew | *Taxus canadensis* |
| Chinkapin Oak | *Quercus muhlenbergii* |
| Chokecherry | *Prunus virginiana* |
| Common Juniper | *Juniperus communis* |
| Common Pawpaw | *Asimina triloba* |
| Common Persimmon | *Diospyros virginiana* |
| Cottonwood | *Populus deltoides* |
| Dogwood | *Cornus spp.* |
| Eastern Red Cedar | *Juniperus virginiana* |
| Eastern Redbud | *Cercis canadensis* |
| Eastern Wahoo | *Euonymus atropurpureus* |
| Elderberry | *Sambucus canadensis* |
| Green Ash | *Franxinus pennslyvanica* |
| Hackberry | *Celtis occidentalis* |
| Hawthorn | *Crataegus spp.* |
| Hazelnut | *Corylus spp.* |
| Honeylocust | *Gleditsia triacanthos* |
| Hoptree | *Ptelea trifoliata* |
| Ironwood | *Ostria virginiana* |

| Common Name | Scientific Name |
|---|---|
| Kentucky Coffeetree | *Gymnocladus diocius* |
| Mountain Maple | *Acer spicatum* |
| Nannyberry | *Viburnum lentago* |
| Northern Pin Oak | *Quercus ellipsoidalis* |
| Ohio Buckeye | *Aesculus glabra* |
| Paper Birch | *Betula papyrifera* |
| Pecan | *Carya illonoensis* |
| Pignut Hickory | *Carya glabra* |
| Pin Cherry | *Prunus pennsylvanica* |
| Pin Oak | *Quercus palustris* |
| Plum | *Prunus spp.* |
| Post Oak | *Quercus stellata* |
| Prairie Crabapple | *Malus loensis* |
| Prickly Ash | *Zanthoxylum americanum* |
| Quaking Aspen | *Populus tremuloides* |
| Red Maple | *Acer rubrum* |
| Red Mulberry | *Morus rubra* |
| Red Oak | *Quercus rubra* |
| River Birch | *Betula nigra* |
| Rock Elm | *Ulmus thomasii* |
| Serviceberry | *Amelanchier spp.* |
| Shagbark Hickory | *Carya ovata* |
| Shellbark Hickory | *Carya laciniosa* |
| Shingle Oak | *Quercus imbircaria* |
| Showy Mountainash | *Sorbus decora* |
| Silver Maple | *Acer saccharinum* |
| Slippery Elm | *Ulmus rubra* |
| Speckled Alder | *Alnus incana* |
| Sugar Maple | *Acer saccharum* |
| Sumac | *Rhus spp.* |
| Swamp White Oak | *Quercus bicolor* |
| Sycamore | *Platanus occiedentalis* |
| White Ash | *Fraxinus americana* |
| White Oak | *Quercus alba* |
| White Pine | *Pinus strobus* |
| Willow | *Salix spp.* |
| Witchhazel | *Hamamelis virginiana* |
| Yellow Birch | *Betula alleghaniensis* |

Native trees and shrubs are better adapted to Iowa's extreme weather!

Adapted from: Iowa State University Extension:
Trees & Shrubs Native to Iowa; Ames, IA 2001

# Iowa: Get To Know Your State

## Iowa Ecosystems

Tallgrass prairies, wetlands, and forests covered Iowa before European settlement - 30 million acres of prairie / marshland and 6.7 million acres of forestland. The rich soils and rolling landscapes provided raw materials for homes and fertile land for successful agricultural crops.

Nearly half the state's forests and 90% of the prairies were cleared for agricultural uses by 1900. By 1974, only 1.5 million acres of forest remained and 99.9% of the prairie was lost as more land was cleared to make Midwestern states the "Breadbasket of the World."

Iowa's forest cover has increased in the past 25 years to just over three million acres of forestland currently (USDA Forest Inventory and Analysis). This increase is due in part to reduced livestock grazing and the use of expanded state and federal cost-share reforestation programs by private landowners.

In past years, there has been increasing interest in prairie reconstruction. These reconstructions may never achieve the diversity and complexity of a native remnant prairie but can still serve many of the aesthetic and ecological benefits.

Iowa's forests are very diverse; from north to south and east to west, they reflect changes in climate, soils and land use. There are four general forest types in Iowa: oak-hickory association, maple-basswood association, riparian forests, and savanna. Each of these forest types offers unique benefits including wildlife habitat, wood products, protection from soil and water erosion, and alternative forest products.

Adapted from Iowa PLT Supplement (2002) and Iowa's Natural Heritage (1982); Cooper.

## Activity - Iowa Soils

Find a soil survey book or get online and find out what type of ecosystem your communities' soils developed in. Soil survey books have great information besides soil data - they also contain information about the history of your county. Knowing the history of a place helps you understand the present condition!

Ask yourself questions like:

How has the land use changed over time?

Why do soils have certain properties caused by the vegetation they formed under?

What are some issues that Iowans face in dealing with the soil resource (i.e. erosion)?

Resources:
United States Department of Agriculture, Natural Resource Conservation Service office; find your local office by visiting: http://offices.sc.egov.usda.gov/locator/app

Use the online soil survey database: http://websoilsurvey.nrcs.usda.gov/app/

# Ecosystem Inventory

An ecosystem is the community of living organisms and non-living materials that interact with each other. Ecosystems can be any size - a whole forest or just a puddle in a prairie.

What types of ecosystems are in and around your community? To understand what makes up an ecosystem, use the inventory data sheet provided to create an inventory of the flora (plants), fauna (animals), and insects in your school yard, neighborhood, or your own backyard. Keep in mind that different plants and animals are around at different times of the year, so you may have to take your inventory during different seasons. Think about why you are finding certain plants or animals during a particular time of year. After you finish your inventory, share it with others. See if what you found is different than what your classmates and friends found. If you need help to identify a plant, animal, or insect, ask your teacher, parents, or friends to help you. Remember, you must act as a steward of the land so don't pick flowers or disturb nests - just be an observer.

To really understand one plant or animal that you found, do some research! Read a book or find information online about it - look for information like:

What does this plant/animal/insect need to survive?

Where can you find this plant/animal/insect? Just in Iowa, or in other states?

Is this plant/animal/insect rare or endangered?

What kinds of habitats can you find this plant/animal/insect in?

What is the life cycle of this plant, animal, or insect?

Is your plant/animal/insect native to Iowa? If not, where is it from?

Find out some interesting facts about your plant/animal/insect and share it with your classmates!

# Inventory Sheet

Name _____
Date _____
Time of Day _____
Location _____
Weather Conditions _____

Draw a picture of what you see here!

Item (plant, animal, insect) _____

Life Stage (examples: young, adult, flowering, seeds present, etc.) _____

Name of Item (Common or Scientific) _____

Characteristics _____

Notes _____

_____

_____

**********

Name _____
Date _____
Time of Day _____
Location _____
Weather Conditions _____

Draw a picture of what you see here!

Item (plant, animal, insect) _____

Life Stage (examples: young, adult, flowering, seeds present, etc.) _____

Name of Item (Common or Scientific) _____

Characteristics _____

Notes _____

_____

_____

# Keeping a Nature Journal

## Introduction

Famous naturalists and foresters throughout time have kept personal journals to record and remember things that they did and saw. These stories and articles have been wonderful records of the adventures of some of the great conservationists, such as Aldo Leopold. You can also create and keep a record of your adventures while you explore Iowa's great outdoors. This journal will help you identify and understand what you are seeing in the natural world and it can help you assess what you can do to improve your community.

## Starting Your Journal

You will need a notebook or diary that you can use for your nature journal. You may also want a couple of field guides to help you identify what you find on your journeys. These are not required, but can be helpful. The only things that you really need are a notebook, pencil, and your five senses!

## What Should You Write?

Your journal can be general or you can focus on one special interest that you like (such as forestry, bird watching, or gardening). You could make daily entries or just occasional remarks on special days. Try to remember to record the date, time, location and any of your observations. Write down what you see, hear, smell, or feel when you are outside. Look for animals, birds, insects, and plants. Draw what you see - animal tracks, nests, stray feathers...

Don't make the mistake of only recording rare or unusual things because common events today may be uncommon twenty years from now. Remember, you must act as a steward of the land so don't pick flowers or disturb nests - just be an observer. You will start to know and understand your environment better when you use all of your senses to collect data.

# Backyard Conservation Word Search

Look for the terms listed below in this word search.
Words can be backwards, across, down, or diagonal.

| H | E | N | S | Q | L | E | M | S | M | J | Q | P | I | Q | O | W | B | Q | I |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V | S | O | N | U | X | S | P | G | B | Y | L | Z | U | B | N | A | S | N | A |
| L | I | I | O | U | I | E | H | E | J | Y | P | P | S | J | D | T | V | I | N |
| L | O | A | W | N | C | S | F | X | V | A | A | Z | V | U | J | E | P | P | A |
| L | U | V | A | I | T | K | S | R | Y | I | A | X | L | G | N | R | R | V | I |
| N | Y | G | E | G | U | R | B | C | E | L | S | J | C | T | B | S | A | V | R |
| Q | R | S | E | N | O | E | J | U | P | S | Q | A | O | I | B | H | I | J | A |
| O | Q | J | Y | M | N | F | K | C | J | A | O | R | V | I | R | E | R | E | P |
| A | E | R | O | S | I | O | N | T | T | P | Y | U | O | N | Y | D | I | D | I |
| N | O | I | T | A | V | R | E | S | N | O | C | D | R | G | I | D | E | E | R |
| N | D | N | A | L | T | E | W | M | I | E | I | T | O | C | I | Y | F | R | I |
| A | B | V | U | O | X | S | E | R | E | V | M | L | R | Z | E | P | H | E | V |
| V | F | Y | H | G | M | T | V | P | E | F | O | N | Z | K | V | S | N | G | C |
| A | D | Z | D | A | S | A | X | R | L | C | T | N | O | E | H | F | G | N | A |
| S | K | H | D | Y | B | T | S | B | E | S | P | Z | A | R | G | A | E | A | R |
| U | L | V | S | V | Y | I | A | H | P | O | L | L | U | T | I | O | N | D | B |
| A | T | O | O | A | T | O | T | F | O | R | E | S | T | B | I | V | G | N | O |
| N | C | Y | G | Y | F | N | G | A | I | R | I | C | L | U | W | V | N | E | N |
| E | Y | W | U | H | X | R | P | Y | T | I | N | U | M | M | O | C | E | E | I |
| R | I | P | A | R | I | A | N | J | N | X | P | P | J | Z | B | T | T | O | F |

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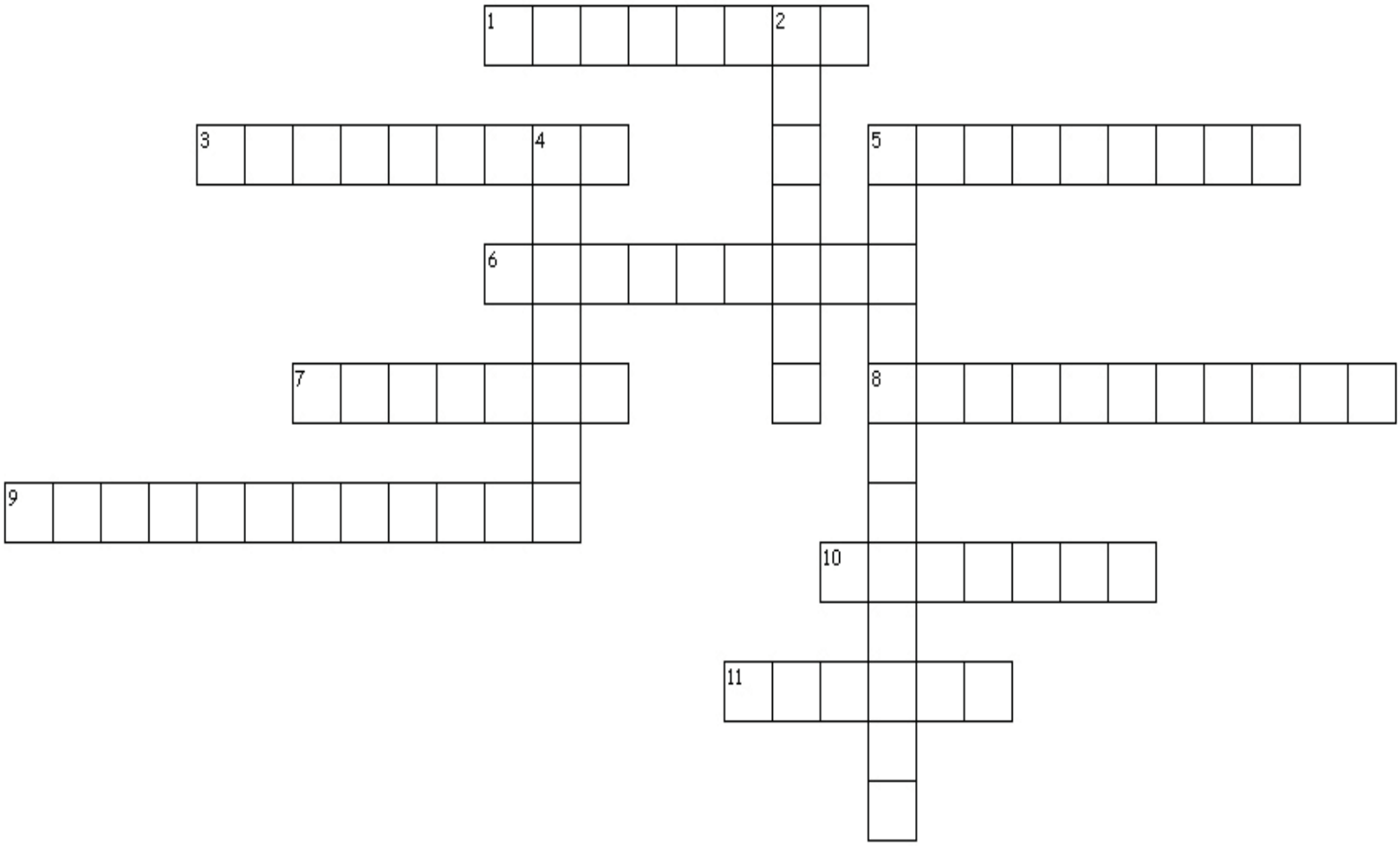
POLLUTION
PRAIRIE
REFORESTATION
RESOURCES
RIPARIAN
SAVANNA
SOIL
SPECIES
WATERSHED
WETLAND

# Crossword Puzzle




Across
1. an individual form of life
3. the region or area drained by a river or stream; a drainage area
5. a group of people, animals, or plants that share common interests, locality, and / or culture
6. the introduction of harmful substances or products into the environment
7. soil loss due to natural or human caused factors
8. the air, water, minerals, organisms and all other external factors surrounding and affecting a given organism at any time
9. a variety of living things within an ecosystem
10. the natural environment of an organism; place that is natural for the life and growth of an organism
11. the place or environment in which an organism originated

Down
2. a group of individuals having common characteristics or qualities
4. the branch of biology dealing with the relationships and interactions between organisms and their environments
5. the careful utilization of natural resources in order to prevent over-use and to increase sustainability

# Glossary of Terms

**Biodiversity** - a variety of living things within an ecosystem

**Community** - a group of people, animals, or plants that share common interests, locality, and/or culture

**Conservation** - the careful utilization of natural resources in order to prevent over-use and to increase sustain ability of those resources

**Ecology** - the branch of biology dealing with the relationships and interactions between organisms and their environment

**Endangered** - threatened with extinction

**Environment** - the air, water, minerals, organisms, and all other external factors surrounding and affecting a given organism at any time

**Erosion** - soil loss due to natural or human caused factors

**Forest** - a large tract of land covered with trees; woodland

**Habitat** - the natural environment of an organism; place that is natural for the life and growth of an organism

**Invasive** - characteristics of undesirable, non-native plants that tend to quickly colonize, spread rapidly, and compete with native species

**Inventory** - a catalog of natural resources, i.e. a count or estimate of wildlife or plants in a particular area

**Native** - the place or environment in which an organism originated; described as being local (i.e. bald eagles to North America)

**Organism** - an individual form of life

**Pollution** - the introduction of harmful substances or products into the environment

**Prairie** - a type of ecosystem that consists of native grasses and forbs

**Reforestation** - to replant trees

**Riparian** - area immediately surrounding a water body, such as a river or lake

**Savanna** - a type of ecosystem that consists of grassland and scattered trees, usually oaks

**Species** - a group of individuals having common characteristics or qualities

**Watershed** - the region or area drained by a river, stream, etc.; drainage area

**Wetland** - a type of ecosystem where standing water is present at least seasonally, characterized by particular plants and animals present

Adapted from Dictionary.com

# Conservation Tips

There are many small, easy things you can do to help conserve our natural resources. Remember, you are a global citizen and every little bit helps!

## At Home

Take showers instead of baths. Shorten your showers as much as possible. A four minute shower can use 20 - 40 gallons of water!

Shut off the water when brushing your teeth.

Replace incandescent light bulbs with compact fluorescents - the initial cost is more, but they last much longer.

Unplug your electronics when they are not in use. Electronics and appliances still use energy even when they are turned off!

Remember the three R's: reduce, reuse, and recycle. Start a recycling program at your home or school if there is not one already.

Use reusable bags, mugs, and water bottles as much as possible. Many retailers now give a discount if you bring in your own bags and mugs!

When possible, walk or ride your bike instead of driving. Carpooling also helps cut emissions and costs!

## Outside

Plant native, drought-resistant varieties to cut down on summer water use.

Mulch your trees, shrubs, and planting beds. Mulch helps retain moisture (and it looks good!).

Use strategically placed plantings to decrease your energy consumption. A properly placed shade tree can save $100 - $250 / year on energy costs and can decrease the use of air conditioning by 20%! Shade plantings will reap the most benefits on the south and west sides of your home. Planting windbreaks (using evergreens) on the north side of your home will help keep it warmer in the winter.

Create backyard habitat by utilizing native trees, shrubs, and forbs to attract wildlife. Including a water source will add to the diversity of animal life you can attract.

# Iowa Nature Photo Contest

The Iowa Department of Natural Resources - Bureau of Forestry is holding its first Iowa Nature Photo Contest! Entries will be judged on the basis of creativity, quality, and effectiveness in conveying the beauty of Iowa; its natural resources, flora, fauna, or landscapes. A panel will judge the entries and winners will be contacted within three weeks of the contest deadline. The 1st place winner will receive a two-year subscription to Iowa Outdoors magazine. Second and third place winners will receive a one-year subscription.

**Rules:**

All photos and entry forms must be received by the TFT Coordinator by **June 15th, 2009**.
Photos can be emailed or mailed to the Coordinator. Photos will not be returned.
The person submitting the photo must be the original photographer.
The photo must be taken in Iowa.
Photographers must be students ages 13 - 18.
Participants can submit up to three images to be judged.

---

## Iowa Nature Photo Contest Entry Form

Name _____

Address _____

Phone # _____

Email (optional) _____

Age _____

Name / Title of Photo _____

Date and Location of Photo _____

# of Photos Submitted _____

Signature of Photographer _____

_____
If under age of 18, parent's or guardian's signature

---

Submit Entries To:
Iowa Department of Natural Resources
Trees For Kids / Teens Coordinator - Photo Contest
502 E. 9th St.
Des Moines, IA 50319-0034
emma.bruemmer@dnr.iowa.gov
Questions? Call 515 / 281-6749

# Reading Rangers

The Reading Rangers program offers trees to be planted by DNR foresters in the state forests in exchange for students reading nature-related books and publications. For every 20 pages of a nature-related publication that is read during Earth Week (April 22 - 30, 2009), the Forestry Bureau will plant a tree in a state forest. Please fill out the form provided and we will plant the trees and send the class a Reading Rangers certificate of appreciation. Please have all forms sent in by May 15th, 2009.

## Become a Reading Ranger!
## Help Iowa's Environment!

School Name & Address: _____

Teacher's Name & Grade Level: _____

| Student | Title of Publication | # of Pages Read |
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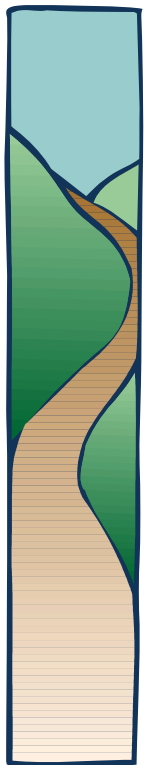
Attach Additional Pages if Necessary

Please mail your completed sheets to:
Trees For Kids/ Teens
Iowa DNR - Bureau of Forestry
502 E. 9th
Des Moines, IA 50319

# Resources



**Iowa Department of Natural Resources - Bureau of Forestry**
502 E. 9th; Des Moines, IA 50319-0034
515 / 281-5918
http://www.iowadnr.gov/forestry/index.html

**Iowa State University - Forestry Extension**
Department of Natural Resource Ecology and Management
339 Science II, Iowa State University; Ames, Iowa 50011-3221
515 / 294-1168
www.forestry.iastate.edu

**Project Learning Tree**
Barbara Gigar, Local PLT Coordinator
2473 160th Rd; Guthrie Center, IA 50115
641 / 747-2200
www.plt.org
http://www.iowadnr.com/education/

**Natural Resources Conservation Service**
Find your local office by visiting: www.ia.nrcs.usda.gov

**Black Hills Energy**
www.blackhillscorp.com/

**MidAmerican Energy**
www.midamericanenergy.com

**Alliant Energy**
www.alliantenergy.com

**Trees Forever**
770 7th Avenue; Marion, IA 52302
319 / 373-0650
www.treesforever.org

**Iowa Woodland Owners Association**
Carol Fullenkamp
319 / 837-6178
www.iowawoodlandowners.org

**Iowa Tree Farm Committee**
www.treefarmsystem.org

**Iowa Nursery and Landscape Association**
PO Box 1647; Waterloo, IA 50704
319 / 215-6855
www.iowanla.org

**Iowa Bankers Association**
8800 NW 62nd Ave; Johnston, IA 50131
515 / 286-4300
www.iowabankers.com

**Iowa One Call**
www.iowaonecall.com
1-800-292-8989

# Answer Page

Word Search p. 13

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| O | | | | | | F | | | | | O | R | V | I | | E | R | | |
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Crossword p. 14

**Across**

1. an individual form of life organism
3. the region or area drained by a river or stream; a drainage area watershed
5. a group of people, animals, or plants that share common interests, locality, and / or culture community
6. the introduction of harmful substances or products into the environment pollution
7. soil loss due to natural or human caused factors erosion
8. the air, water, minerals, organisms and all other external factors surrounding and affecting a given organism at any time environment
9. a variety of living things within an ecosystem biodiversity
10. the natural environment of an organism; place that is natural for the life and growth of an organism habitat
11. the place or environment in which an organism originated native

**Down**

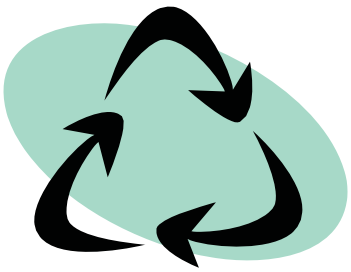
2. a group of individuals having common characteristics or qualities species
4. the branch of biology dealing with the relationships and interactions between organisms and their environments ecology
5. the careful utilization of natural resources in order to prevent over-use and to increase sustainability conservation

# Trees For Teens

# 2008

# Backyard Conservation

Please contact the Trees For Kids / Teens Coordinator at 515 / 281-6749 if you would like a printed copy of these materials or go to the Trees For Kids webpage at:
www.iowadnr.gov/forestry/treesforkids



If you decide to print this booklet, please use recycled paper.




2008